



PENNSYLVANIA STATE FIRE ACADEMY TRENCH RESCUE TECHNICIAN SKILLS

Trench Rescue Technician I & II Skill Stations

NFPA 1006 – Chapter 8 (2013 Edition)

Trench Rescue Technician Level I *		
Station A	Scene Size-up & Incident Action Plan (Site Operations)	Mandatory Station
Station B	Air Monitoring & Ventilation (Support Operations)	Random Station
Station C	General Site Safety (Support Operations)	Random Station
Station D	Cut Station Set-up (Support Operations)	Random Station
Station E	Support Non-Intersecting Trench (Support Operations)	Mandatory Station
Station F	Disentanglement & Removal (Site Operations)	Mandatory Station
Station G	Termination (Site Operations)	Mandatory Station

Trench Rescue Technician Level II **		
Station H	Support Intersecting Trench (Site Operations)	Mandatory Station
Station I	Supplemental Sheeting/Shoring (Site Operations)	Mandatory Station
Station J	Heavy Lift Operations (Site Operations)	Random Station
Station K	Heavy Equipment Coordination (Site Operations)	Random Station

* **Level I MUST Test 6 Skill Stations**

- 4 Mandatory Stations: A, E, F, G
- 3 Random Stations: B, C, or D

** **Level II MUST Test 3 Skill Stations**

- 7 Mandatory Stations: H, I
- 4 Random Stations: (C or K) and (F or G) and (H, I or J) and (N or O)

*** **Combined Tests (Level I and II) shall use 9 Skill Stations:**

If testing both levels together, then all mandatory stations and three random stations must be used.



PENNSYLVANIA STATE FIRE ACADEMY TRENCH RESCUE TECHNICIAN SKILLS

STATION A – Scene Size-up and Incident Action Plan (Site Operations)		Reference NFPA 1006 (2013 Edition) Chapter 8 Mandatory Station: JPRs 8.1.1, 8.1.2	
Test Site	Test Date	Candidate #	Check the Test Type _____ Initial _____ Retest

Directions: Given a simulated trench rescue with a victim, conduct a size-up so existing and potential conditions are evaluated within the trench and the rescue area, general hazards are identified, a witness or “competent person” is secured; the probability of victim existence, number, condition, and location are determined; potential for rapid non-entry rescues or victim self-rescue is recognized, needed personnel, supply, and equipment resources are evaluated; and utility involvement and location are determined. Do you have any questions?

Performance Outcome: Pass / Fail is determined by **16 of 16** tasks being correctly performed.

No.	Tasks	Yes	No	
1	Establishes and utilizes an Incident Management System			
2	Ensures proper use of Personal Protective Equipment (PPE)			
3	Utilizes a personnel accountability system			
4	Completes size-up using observations, victims, bystanders and/or site information			
5	Identifies and safely controls all present and potential hazards			
6	Identifies any involved utilities			
7	Determines basic soil classification			
8	Determines trench dimensions			
9	Establishes safe operating zones			
10	Identifies collapse pattern			
11	Identifies stabilization issues and resources needed			
12	Determines all potential victim locations			
13	Evaluates rescue vs. recovery considerations			
14	Recognizes non-entry rescues or self-rescue of victim			
15	Formulates an initial Incident Action Plan and completes a tactical work sheet (ICS 201 Form or an equivalent).			
16	Completes the assignment in a professional manner			
Please indicate skill outcome			PASS	FAIL

Evaluator Comments: _____

Evaluator Signature: _____ **Evaluator #** _____



PENNSYLVANIA STATE FIRE ACADEMY TRENCH RESCUE TECHNICIAN SKILLS

STATION B – Air Monitoring and Ventilation (Support Operations)		Reference NFPA 1006 (2013 Edition) Chapter 8 Random Station: JPR 8.1.3	
Test Site	Test Date	Candidate #	Check the Test Type ____ Initial ____ Retest

Directions: Given a simulated trench rescue and properly placed ground pads, implement atmospheric monitoring and ventilation in support of the trench rescue operation. Do you have any questions?

Performance Outcome: Pass / Fail is determined by **11 of 11** tasks being correctly performed.

No.	Tasks	Yes	No
1	Ensures proper/continued use of Personal Protective Equipment (PPE)		
2	Selects appropriate air monitoring equipment		
3	Checks and assures proper operation of selected equipment		
4	Provides a fresh air set-up or zeroes monitor per the manufacturer's recommendations		
5	Monitors the general area around the trench starting on the upwind side		
6	Monitors the atmosphere in the trench at appropriate levels		
7	Selects appropriate ventilation equipment		
8	Assures proper operation of ventilation equipment		
9	Properly establishes positive pressure ventilation of trench		
10	Continues to monitor atmosphere in trench and record findings		
11	Completes all tasks without compromising personal or team safety		
Please indicate skill outcome			
			PASS FAIL

Evaluator Comments: _____

Evaluator Signature: _____ **Evaluator #:** _____



PENNSYLVANIA STATE FIRE ACADEMY TRENCH RESCUE TECHNICIAN SKILLS

STATION C – General Site Safety (<i>Site Operations</i>)		Reference NFPA 1006 (2013 Edition) Chapter 8 Random Station: JPR 8.1.3	
Test Site	Test Date	Candidate #	Check the Test Type ____ Initial ____ Retest

Directions: Given a simulated trench rescue emergency and size-up information, demonstrate the ability to place ground pads around the lip of the trench and make the general area safe to conduct further rescue operations. Do you have any questions?

Performance Outcome: Pass / Fail is determined by **7 of 10** tasks being correctly performed.

No.	Tasks	Yes	No
1	Ensures proper/continued use of Personal Protective Equipment (PPE)		
2	Selects appropriate size and type of material to use as grounds pads		
3	Approaches the trench from the end		
4	Properly places ground pads around the lip of the trench		
5	Assures all ground pads are level and contiguous		
6	Notes any areas of concern around the trench lip		
7	Operates from a location of safety and distributes weight over the ground pads while conducting operations		
8	Completes all tasks without compromising personal or team safety		
9	Chooses the appropriate dewatering technique		
10	Ensures all personnel are rotated to REHAB as required		
Please indicate skill outcome		PASS	FAIL

Evaluator Comments: _____

Evaluator Signature: _____ **Evaluator #** _____



PENNSYLVANIA STATE FIRE ACADEMY TRENCH RESCUE TECHNICIAN SKILLS

STATION D – Cut Station Set-up (<i>Support Operations</i>)		Reference NFPA 1006 (2013 Edition) Chapter 8 Random Station: JPR 8.1.3	
Test Site	Test Date	Candidate #	Check the Test Type ____ Initial ____ Retest

Directions: Given a basic equipment cache, demonstrate the ability to establish a cut station in support of a trench rescue operation. Do you have any questions?

Performance Outcome: Pass / Fail is determined by **5 of 5** tasks being correctly performed.

No.	Tasks	Yes	No
1	Ensures proper/continued use of Personal Protective Equipment (PPE)		
2	Selects appropriate location for cut station given the rescue site		
3	Selects appropriate tools and equipment from cache for cut station. At a minimum, the candidate should select the following items: <ul style="list-style-type: none"> • Chain saw _____ • Circular saw _____ • Tape measure/measuring device _____ • Speed and/or framing square _____ • Carpenter’s pencils or lumber crayons _____ • Appropriate PPE for equip. selected _____ • Various extension cords _____ • Generator or other power source _____ • Lighting units (as applicable) _____ 		
4	Assures all equipment selected operates and is in a serviceable condition		
5	Completes all tasks without compromising personal or team safety		
Please indicate skill outcome		PASS	FAIL

Evaluator Comments: _____

Evaluator Signature: _____ **Evaluator #** _____



PENNSYLVANIA STATE FIRE ACADEMY TRENCH RESCUE TECHNICIAN SKILLS

STATION E – Support Non-Intersecting Trench (Site Operations)		Reference NFPA 1006 (2013 Edition) Chapter 8 Mandatory Station: JPR 8.1.4	
Test Site	Test Date	Candidate #	Check the Test Type ____ Initial ____ Retest

Directions: Functioning as a member on a team, and given a simulated trench rescue scenario, design and construct a support/shoring system to access and extricate an entrapped victim in a straight/non-intersecting trench. Do you have any questions?

Performance Outcome: Pass / Fail is determined by **15 of 15** tasks being correctly performed.

No.	Tasks	Yes	No
1	Ensures proper/continued use of Personal Protective Equipment (PPE)		
2	Confirms size-up information obtained (hazards, type of collapse, trench dimensions, soil type/classification)		
3	Assures the placement of ground pads around trench lip		
4	Assures that ventilation and atmospheric monitoring are in place		
5	Ladder placed in trench and secured for access		
6	References and interprets tabulated data for type of system being constructed		
7	Designs/constructs a safe and appropriate system for the given scenario that can support the anticipated load		
8	Team briefing performed prior to shoring operations		
9	Sheeting and uprights (or trench box) placed appropriately		
10	Shoring placed in proper order given situation		
11	Shores secured in place (toe nailed, scabbed)		
12	Shoring checked periodically for stability		
13	Completed system is capable of adequately supporting the anticipated load		
14	Operations are conducted from within safe zones while in trench		
15	Completes all tasks without compromising personal or team safety		
Please indicate skill outcome		PASS	FAIL

Evaluator Comments: _____

Evaluator Signature: _____ **Evaluator #** _____



PENNSYLVANIA STATE FIRE ACADEMY TRENCH RESCUE TECHNICIAN SKILLS

STATION F – Disentanglement and Removal (Site Operations)		Reference NFPA 1006 (2013 Edition) Chapter 8 Mandatory Station: JPRs 8.1.5, 8.1.6, 8.2.6	
Test Site	Test Date	Candidate #	Check the Test Type ____ Initial ____ Retest

Directions: Functioning as a member of a team and given a simulated trench rescue scenario with a victim, access the victim, provide for disentanglement, and properly package and remove the victim from the trench. Do you have any questions?

Performance Outcome: Pass / Fail is determined by **14 of 14** tasks being correctly performed.

No.	Tasks	Yes	No
1	Ensures proper/continued use of Personal Protective Equipment (PPE)		
2	Accesses victim and assesses degree of entrapment		
3	Provides patient protection (head & eye protection, shielding, etc.)		
4	Provides for an appropriate medical evaluation and intervention by qualified personnel prior to releasing victim from entrapment		
5	Recognizes the potential for “crush syndrome”		
6	Excavates dirt from around patient utilizing approved equipment and methods in order not to cause any additional injury to patient		
7	Removes any entrapping mechanism that may be in place		
8	Assures complete disentanglement of patient prior to attempting to remove patient from the trench		
9	Selects appropriate patient packaging and removal equipment given the situation		
10	Appropriately applies selected packaging equipment to patient		
11	Prepares patient for removal from trench		
12	Patient removed from trench using the ladder-raise removal technique, removal is done in a safe and efficient manner		
13	Systems and devices selected are appropriate for conditions		
14	Completes all tasks without compromising personal or team safety		
Please indicate skill outcome		PASS	FAIL

Evaluator Comments: _____

Evaluator Signature: _____ **Evaluator #** _____



PENNSYLVANIA STATE FIRE ACADEMY TRENCH RESCUE TECHNICIAN SKILLS

STATION G – Termination (<i>Site Operations</i>)		Reference NFPA 1006 (2013 Edition) Chapter 8 Mandatory Station: JPR 8.1.7	
Test Site	Test Date	Candidate #	Check the Test Type ____ Initial ____ Retest

Directions: Functioning as a member of a team and given a simulated trench rescue incident with a victim already extricated from the trench, terminate the incident providing for recovery of equipment and personnel. Do you have any questions?

Performance Outcome: Pass / Fail is determined by **12 of 12** tasks being correctly performed.

No.	Tasks	Yes	No
1	Ensures proper/continued use of Personal Protective Equipment (PPE)		
2	Assures ongoing atmospheric monitoring and ventilation		
3	Evaluates installed system components for integrity		
4	Conducts briefing of personnel prior to starting equipment recovery		
5	Removes installed components of shoring/sheeting system in reverse order from which they were installed		
6	Conducts operations in the trench while always remaining in safe zone		
7	Ground pads, ventilation and air monitoring equipment recovered		
8	Trench and site secured		
9	Equipment cleaned and returned to state of readiness		
10	Post incident analysis conducted		
11	Need for Critical Incident Stress Debriefing assessed		
12	Completes all tasks without compromising personal or team safety		
Please indicate skill outcome		PASS	FAIL

Evaluator Comments: _____

Evaluator Signature: _____ **Evaluator #** _____



PENNSYLVANIA STATE FIRE ACADEMY TRENCH RESCUE TECHNICIAN SKILLS

STATION H – Support Intersecting Trench (Site Operations)		Reference NFPA 1006 (2013 Edition) Chapter 8 Mandatory Station: JPRs 8.2.1, 8.2.3	
Test Site	Test Date	Candidate #	Check the Test Type ____ Initial ____ Retest

Directions: Functioning as a member of a team and given a simulated trench rescue scenario, design and construct a support/shoring system to access and extricate an entrapped victim in an intersecting trench. Do you have any questions?

Performance Outcome: Pass / Fail is determined by **15 of 15** tasks being correctly performed.

No.	Tasks	Yes	No	
1	Ensures proper/continued use of Personal Protective Equipment (PPE)			
2	Confirms size-up information obtained (hazards, type of collapse, trench dimensions, soil type/classification)			
3	Assures placement of ground pads around trench lip			
4	Assures ventilation and atmospheric monitoring in place			
5	Ladder placed in the trench and secured for access			
6	References and interprets tabulated data for the type of system being constructed			
7	Designs/constructs a safe and appropriate system for the given scenario			
8	Team briefing performed prior to shoring operations			
9	Sheeting and uprights (or trench box) placed appropriately			
10	Shoring placed in proper order given situation			
11	Shores secured in place (toe nailed, scabbed)			
12	Shoring checked periodically for stability			
13	Completed system capable of adequately supporting anticipated load			
14	Operations conducted from within safe zones/areas while in trench			
15	Completes all tasks without compromising personal or team safety			
Please indicate skill outcome			PASS	FAIL

Evaluator Comments: _____

Evaluator Signature: _____ **Evaluator #** _____



PENNSYLVANIA STATE FIRE ACADEMY TRENCH RESCUE TECHNICIAN SKILLS

STATION I – Supplemental Sheeting/Shoring (Site Operations)		Reference NFPA 1006 (2013 Edition) Chapter 8 Mandatory Station: JPRs 8.2.2, 8.2.3	
Test Site	Test Date	Candidate #	Check the Test Type ____ Initial ____ Retest

Directions: Functioning as a team member and given a simulated trench rescue scenario, install supplemental sheeting and shoring when excavating below the level of protection initially placed in the trench. Do you have any questions?

Performance Outcome: Pass / Fail is determined by **8 of 8** tasks being correctly performed.

No.	Tasks	Yes	No
1	Ensures proper/continued use of Personal Protective Equipment (PPE)		
2	Evaluates the need for supplemental sheeting and shoring		
3	References and appropriately interprets tabulated data for installation of supplemental sheeting and shoring given situation		
4	Assures no excavation is made >2 feet below the approved shoring and sheeting already installed without providing supplemental sheeting/shoring		
5	Installs supplemental sheeting and shoring utilizing approved devices, techniques and supplies		
6	Evaluates installed sheeting/shoring for integrity		
7	Completed system is capable of adequately supporting anticipated load		
8	Completes all tasks without compromising personal or team safety		
Please indicate skill outcome		PASS	FAIL

Evaluator Comments: _____

Evaluator Signature: _____ **Evaluator #** _____



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STATION J – Heavy Lift Operations (<i>Site Operations</i>)		Reference NFPA 1006 (2013 Edition) Chapter 8 Random Station: JPR 8.2.4	
Test Site	Test Date	Candidate #	Check the Test Type ____ Initial ____ Retest

Directions: Functioning as a member of a team and given a simulated trench rescue scenario, coordinate the lifting of a heavy load/object off a patient to facilitate patient disentanglement and extrication. Do you have any questions?

Performance Outcome: Pass / Fail is determined by **11 of 11** tasks being correctly performed.

No.	Tasks	Yes	No
1	Ensures proper/continued use of Personal Protective Equipment		
2	Selects appropriate tools and equipment for presenting situation		
3	Performs load calculation and estimates weight of object to be lifted		
4	Determines appropriate techniques/devices based on weight and configuration of object		
5	Assures object is adequately stabilized prior to beginning lifting operations		
6	Appropriately rigs object to be lifted (if applicable).		
7	Lifts object distance needed to extricate patient		
8	Appropriate application of principles of mechanical advantage and leverage is used and accomplished using appropriate class(s) of levers		
9	Lift and stabilization/cribbing coordinated so the load does not fall greater than 1 inch should lifting procedure inadvertently fail		
10	Lift is coordinated, and the object can be secured in place		
11	Completes all tasks without compromising personal or team safety		
Please indicate skill outcome		PASS	FAIL

Evaluator Comments: _____

Evaluator Signature: _____ **Evaluator #** _____



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STATION K – Heavy Equipment Coordination (Site Operations)		Reference NFPA 1006 (2013 Edition) Chapter 8 Random Station: JPR 8.2.5	
Test Site	Test Date	Candidate #	Check the Test Type ____ Initial ____ Retest

Directions: Given a simulated trench rescue scenario, coordinate the use of heavy equipment (e.g., vacuum truck, excavation equipment, crane, etc.) in and around the trench rescue site. Do you have any questions?

Performance Outcome: Pass / Fail is determined by **5 of 5** tasks being correctly performed.

No.	Tasks	Yes	No
1	Ensures proper/continued use of Personal Protective Equipment (PPE)		
2	Confirms trench is adequately secured prior to having heavy equipment operate in/around immediate area of trench		
3	Coordinates movement of heavy equipment in the hot zone with other rescue related activities		
4	Utilizes proper hand signals and/or voice communication during the operation		
5	Completes the assignment in a professional manner		
Please indicate skill outcome			
			PASS FAIL

Evaluator Comments: _____

Evaluator Signature: _____ **Evaluator #** _____